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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,668	05/21/2004	Boris A. Movchan	13DV-14039-3	3667
30952	7590	11/03/2006		
HARTMAN AND HARTMAN, P.C. 552 EAST 700 NORTH VAIPARAISO, IN 46383			EXAMINER BUEKER, RICHARD R	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 11/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/709,668	Applicant(s) MOVCHAN ET AL.	
	Examiner Richard Bueker	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213:

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6 and 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The amendment after Final filed October 5, 2006 has been entered. The amendment cancelled all rejected claims, and therefore the rejections and the finality of the last office action have been removed. On further consideration of the pending claim limitations, however, the following prior art rejections have been made.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rigney (6,586,115) or Darolia (6,808,799) taken in view of Demarey (4,676,994), Beesley (5,849,371) and Singh (2002/0110698). Rigney (see col. 7, lines 11-19, for example) and Darolia (see col. 8, line 34 to col. 9, line 5, for example) each discloses an EDPVD apparatus for coating a component, the apparatus including an EBPVD target that comprises a single ingot containing yttria-stabilized zirconia and ceria. Rigney and Darolia don't discuss the use of a barrier operable to be positioned between the ingot and the component and a barrier removing means as claimed by applicants. Demarey (see col. 3, line 55 to col. 4, line 67 and col. 5, line 54 to col. 6, line 8) discloses an apparatus for electron beam evaporation of a target material containing zirconia and yttria (see paragraph bridging cols. 3 and 4), wherein the apparatus includes a vapor shield or shutter for selectively covering the crucible until coating actually begins. Beesley also discloses an electron beam evaporation apparatus which has a shutter for covering the crucible during the start-up phase prior

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to the actual workpiece coating step. Beesley teaches that it is desirable for the shutter removing means to comprise a programmable means for automatically removing the shutter following the start-up phase. Singh is included for his teaching (see paragraph 54) of using a shutter in combination with an ingot source. Demarey, Beesley and Singh describe the conventional prior art practice of shuttering an EBPVD vapor source during an initial phase of vaporization, followed by a step of uncovering the vapor source during the actual deposition process, which is followed by a step of re-covering the vapor source to terminate the deposition process. It would have been obvious to one skilled in the art to provide the EBPVD apparatus of Rigney or Darolia with a shutter means to gain the advantages taught by Demarey, Beesley and Singh, such as to fully heat a vapor source prior to starting the deposition process. Also, a conventional prior art shutter, programmable or not, has an inherent capability of being moved in response to changes in the composition of the vapor generated by the vapor source.

Rigney and Darolia have a common assignee and inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application

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and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Claims 1, 2, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vine (5,334,462) taken in view of Demarey (4,676,994) and Beesley (5,849,371). Vine (see paragraph bridging cols. 1 and 2, and the paragraph bridging cols. 2 and 3, for example) discloses a process of depositing a coating comprising yttria and ceria by EBPVD, using a single source containing yttria and ceria. Vine doesn't discuss the use of a source shutter in his EBPVD apparatus. Demarey and Beesley describe the conventional prior art practice of shuttering an EBPVD vapor source during an initial phase of vaporization, followed by a step of uncovering the vapor source during the actual deposition process, which is followed by a step of re-covering the vapor source to terminate the deposition process. It would have been obvious to one skilled in the art to provide the EBPVD apparatus of Vine with a shutter means to gain the advantages taught by Demarey and Beesley, such as to fully heat a vapor source prior to starting the deposition process.

Claims 9, 10, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vine (5,334,462) taken in view of Demarey (4,676,994) and Beesley (5,849,371) for the reasons stated in the rejection of claims 1, 2, 19 and 20 above, and taken in further view of Singh (2002/0110698). Vine doesn't discuss the use of an ingot

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as his vapor source. Singh (see paragraph 54) teaches that an ingot shape can successfully be used as an EBPVD source. It would have been obvious to one skilled in the art to utilize a source material in the form of an ingot for the EBPVD apparatus of Vine because Singh teaches that EBPVD can successfully be carried out using an ingot source.

Claims 1, 2, 6 and 8-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Movchan (6,669, 989) taken in view of Demarey (4,676,994), Beesley (5,849,371) and Singh (2002/0110698). Movchan (see Fig. 8a and col. 15, lines 14-35, for example) discloses an EDPVD apparatus for coating a component, the apparatus including an EBPVD target that comprises a single ingot containing yttria-stablized zirconia and also ceria. Movchan doesn't discuss the use of a barrier operable to be positioned between the ingot and the component and a barrier removing means. Demarey, Beesley and Singh describe the conventional prior art practice of shuttering an EBPVD vapor source during an initial phase of vaporization, followed by a step of uncovering the vapor source during the actual deposition process, which is followed by a step of re-covering the vapor source to terminate the deposition process. It would have been obvious to one skilled in the art to provide the EBPVD apparatus of Movchan with a shutter means to gain the advantages taught by Demarey, Beesley and Singh, such as is to fully heat a vapor source prior to starting the deposition process.

Claim 1 also recites the limitation of "means for preventing the vapor cloud from contacting and condensing on the component during an initial phase in which the composition of the vapor cloud is such that the relative amount of the at least one oxide

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compound in the vapor cloud is greater than the relative amount of the at least one oxide compound in the evaporation source", and claim 9 includes an analogous limitation. It is noted, however, that a conventional prior art shutter has an inherent capability of being used in the manner indicated by this limitation. Shutters such as those described by Demarey, Beesley and Singh are "means for preventing the vapor cloud from contacting and condensing on the component" as claimed. The further recitation of "during an initial phase in which the composition of the vapor cloud is such that the relative amount of the at least one oxide compound in the vapor cloud is greater than the relative amount of the at least one oxide compound in the evaporation source" relates to when the shutter is moved, and is a process-type limitation that is in effect a recitation of an intended use of the apparatus. A conventional prior art shutter, programmable or not, has an inherent capability of being moved in the manner described by this limitation. While Movchan's Fig. 8a ingot produces ceria vapor at an intermediate stage of the deposition process, a conventional shutter would still have an inherent capability of being moved and used as recited. Because the claims are apparatus claims rather than process claims, the provision of a shutter in the apparatus of Movchan would inherently meet the above quoted claim 1 limitation.

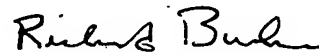
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Richard Bueker
Primary Examiner
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